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Stenostegia congesta (Myrtaceae), a New Genus and Species from the Victoria River, Northern Territory, Australia.

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Abstract

Stenostegia congesta A.R.Bean, a new genus and species of the Myrtaceae subtribe Baeckeinae Benth. is described, illustrated, and compared to related taxa. A key to the genera of subtribe Baeckeinae is provided. The distribution, habitat and conservation status of the new species are discussed.

Introduction

Ferdinand Mueller was appointed botanist for the overland expedition led by A.C. Gregory in 1855–56, during which Mueller collected several thousand specimens, despite the difficult conditions (Cohn 1996). Many of the specimens he collected were of taxa new to science, and nearly all of these were subsequently described by Mueller in his Fragmenta Phytographiae Australiae and elsewhere.

Mueller collected a solitary specimen of a *Baeckea*-like plant, which he labelled "Camphoromyrtus umbellatus", from the Victoria River. He unselfishly sent this sole specimen to George Bentham at Kew, and it still resides in the Kew Herbarium today (Fig. 1).

The specimen is imperfect, bearing buds, but no flowers or fruits. Bentham (1867) included it in *Baeckea virgata* (J.R.Forst. & G.Forst.) Andr. (= *Babingtonia virgata* (J.R.Forst. & G.Forst.) F.Muell.), and it does bear a strong superficial resemblance to the form of that species from Victoria and southern New South Wales.

Several popular publications and treatments in floras of recent years list *Baeckea virgata* as occurring in the Northern Territory (e.g. Elliot & Jones 1982, Floyd 1989, Jeanes 1996). These records are all based on Mueller's solitary Victoria River collection in 1855–56.

Recent botanical exploration of the Gregory National Park, which includes a large section of the Victoria River gorge, have resulted in the collection of the first specimens of Mueller's *'Baeckea'* since late 1855 or early 1856. This taxon would fit into Bentham's broad concept of *Baeckea*, but taxonomic research into the group in recent years (Trudgen 1986, 1987; Bean 1995, 1997) has shown that *Baeckea* s. lat. is polyphyletic, and that recognition of several genera is warranted.

Studies of flowering and fruiting material recently procured has shown that the Victoria River taxon is not referable to either *Baeckea* L. or *Babingtonia* Lindl., and represents a new genus and species.

Taxonomy

Stenostegia A.R.Bean *gen. nov.*

Frutices glabri. Folia opposita, integra, punctata. Inflorescentiae solitariae, axillares, cymosae, pluriflorae. Hypanthium obconicum. Lobi calycis 5, compositi, obtusi. Petala 5, orbicularia. Stamina petalis breviora, omnia libera; anthera

Fig.

1. Mueller's collection of *Stenostegia congesta* (lower specimen only). The label reads "Camphoromyrtus umbellatus, Ferd. Mueller, Very rare on sandstone precipices of the Victoria River, this is all that ever was seen in flower, I was not there for this plant in right season. My only specimen."

versatilia, rimis longisparallelis aperientia. Stylus simplex, teres; stigma capitatum. Ovarium 3-loculare. Ovula 8–12 in quoquo loculo, in seriebus duabus obliquis secus placentam disposita. Fructus capsulares, hemisphaerici, valvis inclusis. Semina semidiscoidea, lateribus planis et dorsis rotundatis.

Typus: Stenostegia congesta A.R.Bean

Glabrous *shrubs*. *Leaves* opposite, entire, glandular-dotted. Inflorescences solitary, axillary, cymose, many-flowered. *Hypanthium* obconical. Calyx lobes 5, compound, obtuse. Petals 5, orbicular. Stamens shorter than the petals, all free; anthers versatile, opening by long parallel slits. Style simple, terete; stigma capitate. Ovary 3-locular. Ovules 8–12 per loculus, arranged in two oblique rows along placenta. Fruits capsular, hemispherical, valves enclosed. Seeds discoid, with flat sides and rounded backs.

A monotypic genus endemic to Australia

Etymology

The name *Stenostegia* is derived from the Greek *stenos* meaning narrow, and *stege* meaning shelter. This is in reference to the habitat of the genus on sheltered sites only a few metres wide.

Notes

A key to the genera of Subtribe Baeckeinae (excluding Western Australia) is presented below. Species belonging to these genera, with the exception of *Astartea* spp., have traditionally been included in *Baeckea* L.

Stenostegia is only distantly related to *Triplarina* Raf., *Euryomyrtus* Schauer and *Ochrosperma* Trudgen, all of which differ fundamentally by their reniform, papillose, turgid seeds. *Stenostegia* is closely related to *Babingtonia* Lindl., differing however by the versatile anthers dehiscing by long parallel slits, whereas all *Babingtonia* spp. have anthers adnate to the filaments, and opening by pores or short oblique slits. The multiple cymes of the inflorescence in *Stenostegia* are not found in *Babingtonia* (inflorescences solitary or in a simple dichasial cyme of up to 7 flowers). In *Stenostegia*, the ovules are arranged obliquely along the placenta, whereas in *Babingtonia* the ovules are either radially arranged or in parallel rows on the placenta. Furthermore, the tightly-grouped, strictly antesepalous stamens found in *Stenostegia* are not a feature of any *Babingtonia* spp., with the exception of *B. taxifolia* (Merr.) A.R.Bean.

Stenostegia differs from *Baeckea* by the compound inflorescences (strictly solitary in *Baeckea*); well developed peduncles (peduncles absent or rudimentary in *Baeckea*); compound calyx-lobes (illustrated in Bean 1997: 631) which in *Baeckea* are known only from *B. brevifolia* (Rudge) DC.; the ovules arranged obliquely along the placenta (parallel rows in *Baeckea*); and the 3-locular ovary ((1–) 2-locular for *Baeckea*, except for some specimens of *B. frutescens* L.).

Stenostegia differs from *Astartea* DC. by the compound inflorescences (strictly solitary in *Astartea*); compound calyx-lobes (simple in *Astartea*) and filaments all free (fused into groups in *Astartea*).

The stipules found in *Stenostegia* are not found in *Babingtonia, Astartea* or *Baeckea*. The raised longitudinal veins in the leaves of *Stenostegia* are unique in the subtribe Baeckeinae.

Key to the genera comprising subtribe Baeckeinae in Australia (excluding Western Australia), New Caledonia and Malesia.

1. Ovules and seeds reniform, not angular, ovary 3-locular.....2
1. Ovules and seeds discoid, angular, ovary 2- or 3-locular.....4

2. Some stamens opposite centre of petals ..... **Euryomyrtus**
2. No stamens opposite centre of petals 3
3. Ovules 2 per loculus, stamens 5–8 ..... **Ochrosperma**
3. Ovules 8–13 per loculus, stamens 14–18 ..... **Triplarina**
4. Stamens fused into 5 antesepalous bundles ..... **Astartea**
4. Stamens completely free 5
5. Anthers adnate, dehiscing by pores or short divergent slits ..... **Babingtonia**
5. Anthers versatile, dehiscing by long parallel slits 6
6. Inflorescences 1-flowered, peduncles < 0.5 mm long or absent, calyx lobes simple, ovary 2- or rarely 3-locular ..... **Baeckea**
6. Inflorescences 3–35-flowered, peduncles 3–9 mm long, calyx lobes compound, ovary 3-locular ..... **Stenostegia**

Stenostegia congesta A.R.Bean *sp. nov.*

Frutex cortice badio fibroso. Folia lanceolata ad ellipticam, 17–35 mm longa, venis 3–5 longitudinalibus. Inflorescentia 3–35-flora. Hypanthium laeve, obconicum. Stamina 11–15, filamentis teretibus.

Typus: Northern Territory. VICTORIA RIVER DISTRICT: Gregory National Park, c. 4.5 km SW of Victoria River Roadhouse, 15°38' 59"S, 131°05' 49"E, *I. Cowie 7320 & C. Mangion*, 17.ix.1996, (holotype BRI [2 sheets + spirit], isotypes AD, CANB, DNA, K, L, MEL, MO, NE, NSW, NT, NY, PERTH, QRS, US, distribuendi).

Shrub to 4 m high, branchlets pendulous. Bark red-brown, persistent, fibrous, furrowed. Stem flanges pale brown, flat, not winged, not warty, margins entire. *Leaves* lanceolate to elliptical, 17–35 mm long, 3.5–5.5 mm wide, straight, flat, not keeled, slightly discolorous, apex acute, oil glands prominent on lower surface, c. 0.5 mm apart; 3 or 5 longitudinal veins readily visible on abaxial surface, invisible on adaxial surface; petioles c. 1.0 mm long; stipules present, linear, c. 0.5 mm long, caducous. *Inflorescence* axillary, solitary, dichasially cymose, 3–35 flowered; peduncles 3–9 mm long; bracts and bracteoles numerous, persistent, elliptical to lanceolate, up to 2.2 mm long, acute or obtuse; stipes 3–6 mm long. Hypanthium obconical, 1.8–2.2 mm long, fused to the ovary for half to two-thirds of its length, smooth, glandular, unribbed or with 5 faint ribs extending longitudinally from calyx lobes, floral disc concave; calyx lobes compound; inner lobe obtuse, c. 0.5 × 1.0 mm, thin, margins entire or fimbriate; outer lobe c. 0.3 mm long, thick, erect, obtuse, not exceeding inner lobe. Corolla up to 5 mm across; petals orbicular, 1.3–1.8 × 1.4–2.0 mm, white, oil glands present, margins entire. Stamens 11–15, in groups of 2–3 (rarely 4) opposite the calyx lobes, each about the same length; filaments terete, c. 0.9 mm long, not geniculate, connective-gland brown, less than half anther length; anthers versatile, dehiscing by parallel slits, anther cells free. Style terete, up to 1.5 mm long after anthesis, set into a pit; stigma broadly capitate. Ovary 3-locular, ovules 8–12 per loculus, arranged in two oblique rows along placenta. Fruit hemispherical, 2.0–2.3 × 2.5–3.5 mm, valves broadly deltate, rather woody, enclosed. Seeds discoid, c. 0.6 mm long, brown, with flat to convex sides and rounded backs, surface minutely reticulate. (Fig. 2)

Distribution

Stenostegia congesta is restricted to a short section of the Victoria River, and adjacent tributaries, in north-western Northern Territory.

Ecology

It grows at the bases of ephemeral waterfalls, or on ledges of small sandstone cliffs, in areas which receive perennial seepage. Some associated species are *Melaleuca* sp.

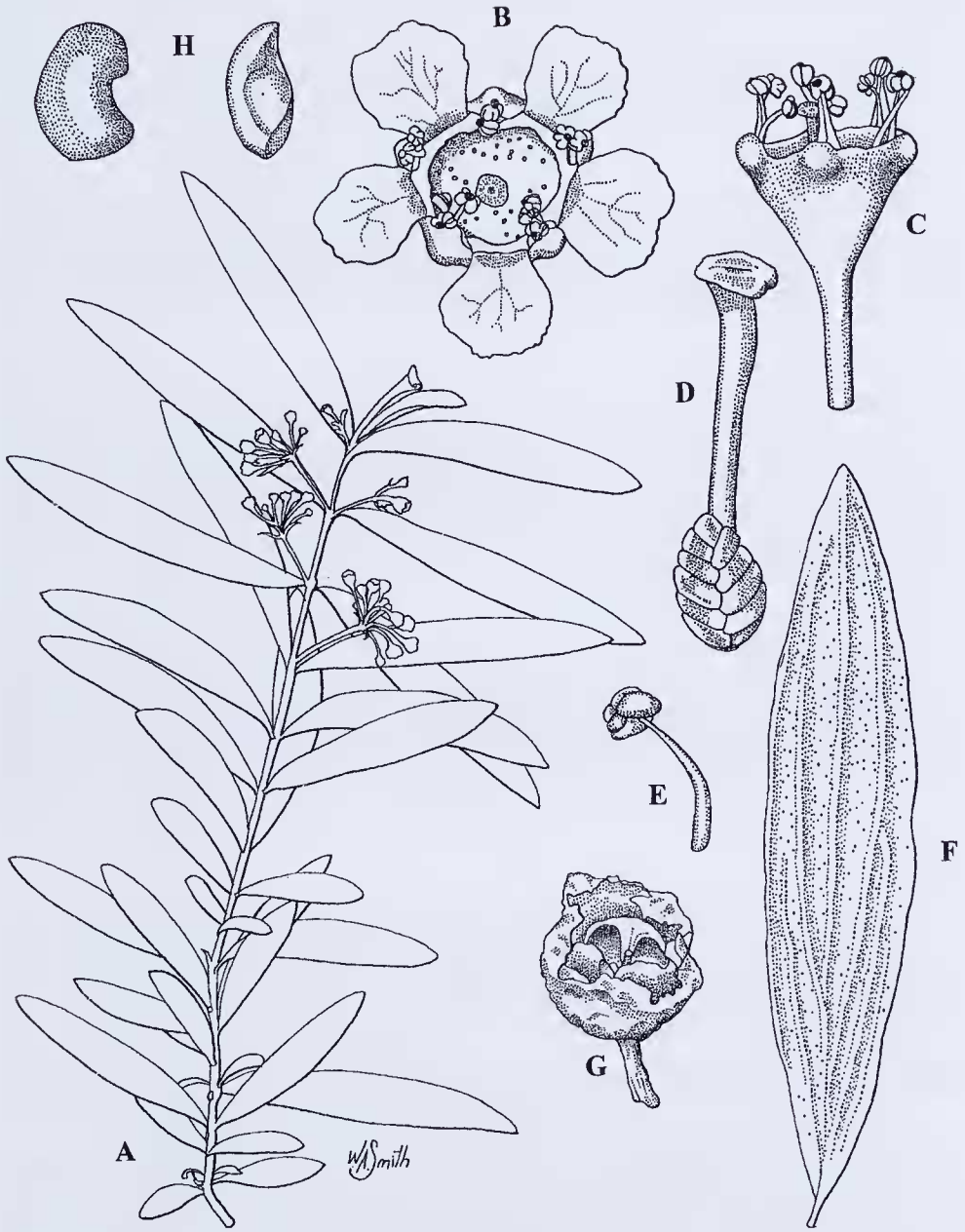

Fig. 2. *Stenostegia congesta*. **A**. flowering branchlet x 1.5. **B**. flower from above x 10. **C**. lateral view of flower, petals removed x 10. **D**. style and ovule arrangement x 20. **E**. anther and filament x 20. **F**. leaf, abaxial surface x 4. **G**. fruit x 10. H. seed, two views x 40. **A**,**F**,**G**,**H** *Cowie 7320 & Mangion* (holotype); **B**,**C**,**D**,**E** *Cowie 7324 & Mangion*.

nov. (see Craven, this volume), *Dicranopteris linearis* (Burm.f.) Underw., *Eucalyptus aspera* F.Muell. and *E. brachyandra* F.Muell. Flowers are recorded in September.

Etymology

The specific epithet *congesta* means congested, in reference to the tightly clustered flowers of the inflorescence.

Conservation Status

The risk category for *Stenostegia congesta* according to the criteria of Chalson and Keith (1995) is 'priority for investigation' (criterion a). The species is known from only a few small populations, but the area is poorly explored, and the probability of locating more populations is high.

Specimens Examined

Northern Territory: 8 km SSW of Victoria River bridge, *D.E. Albrecht 7425 & P. Latz*, 17.iv.1996 (BRI, DNA, MEL); Gregory N.P., c. 7.3 km SSW of Victoria River Roadhouse, *I. Cowie 7324 & C. Mangion*, 17.ix.1996 (BRI, CANB, DNA, HO, MEL, NSW, PERTH); Gregory N.P., c. 6 km SW of Victoria River Roadhouse, *I. Cowie 7326 & C. Mangion*, 17.ix.1996 (BRI, CANB, DNA, MEL); sandstone precipices of the Victoria River, *F. Mueller* s.n., in 1855-56 (K).

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